ABSTRACT

Pest and disease attacks are the biggest problem in tea plantations, because attacks can reduce the quality and quantity of the crop. On average, attacks can reduce 30 % of crop yields. Case studies are conducted at Pusat Penelitian Teh dan Kina, Gambung, Ciwidey, Bandung, Indonesia or often called the Gambung PPTK. In PPTK Gambung, pest and disease control is always carried out by spraying pesticides. To control pests and diseases in plants, an analysis from an expert / researcher is needed to determine how to control and the type of pesticide used.

Artificial intelligence based on IoT is a solution that can be used to assist researchers in making decisions quickly. This technology can help field workers by providing recommendations for handling pest and disease attacks. Expert system and fuzzy logic algorithm are chosen to make decisions in which input parameters are observational data, and sensor data. In this research, the accuracy of decision-making is 95% and the precision is 93.75 % if it is not applied filtering process. The accuracy and the precision is 100 % if it is applied filtering process from the results of the recommendations. This system can work online so that it can help researchers in controlling pests and diseases.

Keywords: pests, pesticides, researchers, field workers, fuzzy logic, expert systems, recommendations, Wireless Sensor Network, Early Warning System.